Energy Development in Montenegro: Future, Opportunities and Challenges
Role and Support of KfW – current status and plans

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Principal Project Manager
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KfW Bankengruppe in brief.

- Promotional bank of the Federal Republic of Germany.
- Founded in 1948.
- Shareholders: Federal Republic of Germany (80%), German federal states (20%).
- Representative offices: around 50 offices and representations worldwide.
- Average number of employees in 2007: 3,700.
- Rating: AAA/Aaa/AAA.
Brand structure.

- Promotion of SMEs, Business founders, Start-ups
- Promotion of housing, environmental and climate protection, education, infrastructure, social issues
- International project and export finance
- Promotion of developing and transition countries
KfW: How do we work?
Energy Portfolio
Objectives of Co-operation

Overall Objectives:

- Enhancement of economic growth and productivity
- Promotion of energy supply security and reliability
- Promotion of environmental benign energy systems (ecological sustainability)
- Promotion of investments in energy efficiency measures – supply and demand side
- By funding bank credit lines ⇒ deepening of the financial sector

- Priority for cost effective measures such as rehabilitation
- Sustainable operation to be assured (tariffs, management, etc.)
- Technical assistance, when needed
- Government consent to funding concept needed
### Active Portfolio: EUR 450 Mn. (06/2008)

<table>
<thead>
<tr>
<th>Country</th>
<th>Hydro-power (large)</th>
<th>Other Renewable Energies</th>
<th>Energy-efficiency (demand side)</th>
<th>District Heating</th>
<th>Transmission/Distribution</th>
<th>Rehabilitation TPP</th>
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</table>
# Overview
## Ongoing Projects in Montenegro

<table>
<thead>
<tr>
<th>Project</th>
<th>Financing</th>
<th>Loan (mn. EUR)</th>
<th>Grant (mn. EUR)</th>
<th>Total commitment (mn. EUR)</th>
<th>Contract (Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitation of HPP Perucica – phase I</td>
<td>Mixed financing</td>
<td>3.58</td>
<td>5</td>
<td>8.58</td>
<td>2004</td>
</tr>
<tr>
<td>Construction of 400 kV line Tirana-Podgorica</td>
<td>Mixed Financing</td>
<td>38.6</td>
<td>5.3</td>
<td>43.9</td>
<td>2004/2007</td>
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<tr>
<td>Credit Line for Energy Efficiency</td>
<td>Grant Financing</td>
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<td>3</td>
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<td>2006</td>
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<tr>
<td>Construction/Extension of Podgorica 5 / Ribarevine Substations</td>
<td>Mixed Financing</td>
<td>5.4</td>
<td>3.1</td>
<td>8.5</td>
<td>2007</td>
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<td>Rehabilitation of HPP Piva</td>
<td>Interest Reduced Loan</td>
<td>16</td>
<td>1</td>
<td>17</td>
<td>2007</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>63.58</strong></td>
<td><strong>17.4</strong></td>
<td><strong>80.98</strong></td>
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</table>
Project Example
Rehabilitation of HPP Piva (342 MW)

Objectives
- Prolongation of lifetime for 25-30 years
- Abatement of approx. 740,000 t CO₂ p.a.
- Supporting an ecologically sustainable, reliable and cost efficient energy supply in Montenegro

Activities
- Rehabilitation and modernization of turbines and electric equipment
- Sealing of concrete dam
- Stabilisation of rock formation

Cost: approx. EUR 60 mn.
Financing: EUR 17 mn.
(Phase II: up to EUR 30 mn.)
Project Example
Rehabilitation of HPP Perucica (307 MW)

- **Objectives**
  - Prolongation of lifetime for 25 to 30 years
  - Ensure full utilization of installed capacity (presently 93 %)

- **Activities**
  - Circuit breakers
  - Auxiliary power supply
  - Control, protection and measuring systems for all units
  - Data processing system and technical information system
  - Technical Assistance

- **Financing:** EUR 8.6 mn.
  (Phase II: up to EUR 30 mn.)
Project Example
Extension/Construction of Substations “Ribarevine“ & “PG5“

- **Extension of Ribarevine 400/110/35 kV**
  - safer and more stable electricity supply to the North-Eastern region of Montenegro
  - considerable reduction of losses

- **Construction of Podgorica 5, 110/10 kV**
  - improve electricity supply for consumers in Podgorica area
  - loss reduction
  - closing a 110 kV ring around Podgorica

- **Financing**: EUR 8.5 mn.
  (Phase II: up to 5 mn.)
Project Example
Construction of 400 kV Transmission Line
Podgorica - Tirana

- **Objectives**
  - Connection to European-400 kV-power grid
  - Improvement of electricity supply in the region
  - Expansion of cross-border transmission capacity

- **Activities**
  - Construction of 400-kV transmission line between Tirana and Podgorica (length: 155 km)
  - Extension of substations in Montenegro and Albania

**Financing:** EUR 43.9 mn.
  (in Montenegro: EUR 11.2 mn.)
**Project Example**

**Facilities for Energy Efficiency and Renewable Energies**

- **Objectives:**
  - Promotion of investments in energy efficiency – especially on the demand side
  - Support for renewable energies
  - Refinancing of bank credit lines ⇒ financial deepening

- **Eligibility criteria for the investments:**
  - Reduction of greenhouse gas emissions of 20%
  - Energy savings of 20%
  - Economic rate of return of at least 8%
  - Financial viability (decision of the partner bank)

- **Implementation of the Facility**
  - Maturity: 8 - 12 years
  - Refinancing terms: close to market
  - Montenegro: cooperation with CKB
  - Marketing
  - Technical Assistance
## Overview

### Project Pipeline

<table>
<thead>
<tr>
<th>Project</th>
<th>Anticipated Financing (mn. EUR)</th>
<th>Agreement to be concluded (expected Year)</th>
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<tbody>
<tr>
<td>Replacement of the electrostatic-precipitator in TPP Pljevlja</td>
<td>Up to 10</td>
<td>2008</td>
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<tr>
<td>Construction/Extension of Podgorica 5 / Ribarevine Substations – additional financing</td>
<td>Up to 5</td>
<td>2008</td>
</tr>
<tr>
<td>Rehabilitation of HPP Piva – Phase II</td>
<td>Up to 30</td>
<td>2009</td>
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<tr>
<td>Rehabilitation of HPP Perucica – Phase II</td>
<td>Up to 30</td>
<td>2010</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Up to 75</td>
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KfW in Montenegro
Fundamentals of Cooperation

- KfW is one of the main investors promoting the energy sector – covering a wide range of different sub-sectors

- Excellent exchange of information and good work relations with all relevant institutions in the GoM
  - Coordination of tasks
  - Common understanding of objectives
  - High degree of trust
  - Mutual familiarity with procedures

- Extensive networking between all stakeholders, including IFIs
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